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FRONT COVER

Transplanting Rice in Thailand

In a test plot in Central Thailand, rice is being transplanted under the direction of the leaders in the rice improvement program of Thailand—Dr. Krui Bunyasingha, Chief of the Thai Ministry of Agriculture's Rice Research Division, and Dr. H. H. Love of the United States Special Technical and Economic Mission.

BACK COVER

Cotton: U. S. Exports and Foreign Production

When rising production abroad has made foreign supplies abundant, exports of American cotton have declined.

NEWS NOTE

Eight Countries Meet To Discuss Surplus Disposal

On February 23, 1954, representatives of eight countries, all members of the Food and Agriculture Organization of the United Nations (FAO), will meet in Washington to discuss the problems and methods of disposing of surplus agricultural commodities. The countries to be represented at the meeting are Argentina, Egypt, France, India, the Netherlands, New Zealand, the United Kingdom, and the United States.

This meeting will be essentially a study session to consider the most suitable means of disposing of agricultural surpluses, and to set forth principles that countries should observe so that the action of disposal will not disrupt the normal patterns of production and international trade.

At the FAO conference in Rome last November and December, which is reported on page 29 of this issue, a number of countries expressed concern over the harmful effects that disposal of surplus commodities might have on their economies. They felt that the main solution to the problem of excess supplies of agricultural commodities was to increase consumption by raising purchasing power and lowering the costs of production and distribution. But in addition they wanted to try to draw up principles that could be applied to disposal of surpluses to minimize international repercussions.

The United States representative at this meeting is scheduled to be Gustave Burmeister, Assistant Administrator, FAS, with advisers from the Departments of Commerce and State.

Credit for photos is given as follows: p. 37, Henry S. Kernan.

FOREIGN AGRICULTURE ALICE FRAY NELSON, EDITOR

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Outlook for American Cotton In Foreign Markets

by A. W. PALMER

The present season again finds the United States in the position of residual supplier of cotton to the world with demand for its exports limited until other exporters have largely sold out. Even so, there are grounds for expecting that the export total will not be less than last season's 3 million bales and that it may possibly be somewhat more.

Foreign producing countries, which last year shipped about 8½ million bales of the world's 11½ million export total, are in position to ship as much this year. But textile trade in most foreign countries is measurably better than it was a year ago; and, if the improvement holds through the season, consumption abroad of imported cotton will in the aggregate exceed that of last season.

In the first half of this season, foreign-grown cottons, because of their relative cheapness, have been having their inning in the world market. But discounts on foreign growths have lately been narrowing, and pressure of sales competition from these growths has eased. A better demand for American cotton in the second half of the season is thus possible, although foreign spinners must be expected to buy cautiously as long as there continues to be uncertainty about American price programs in 1954-55.

The dollar shortage that plagued our foreign customers for so long after the war seems, for the time being at least, to have eased; with our contributions to mutual security and with the restrictions that importing countries still apply to dollar expenditures for nonessentials, a number of our best customers are now finding themselves moderately comfortable, dollar-wise, even though our direct economic aid to them is rapidly tapering off. For the others, there is still available this year for the purchase of cotton direct economic aid sufficient, if used, to buy about 900,000 bales. Credits already granted by the Export-Import Bank and applicable to this season's shipments will buy up to 700,000 bales more. Furthermore, a provision in the Mutual Security Act permits us, under certain conditions, to sell cotton for foreign currencies.

Despite the improvement of their balance-of-payments positions, most foreign countries are of course still limited in their dollar resources, and need them for many purposes. It is a question with governments what their dollars can best be used for; and, in the management of their national finances, they allocate their dollar resources with an eye to what they consider their greatest needs. Thus American cotton in a sense has to meet competition from American wheat, tobacco, fruits, and some of the oils and fats, not to mention machinery, petroleum products, coal, and numerous other products.

Moreover, our cotton faces competition with gold, since most countries whose gold holdings were depleted during and after the war are eagerly using every opportunity to replenish their gold reserves, to increase the strength and improve the convertibility of their currencies. In the 12 months ending June 30, 1953, other countries bought our gold to a total of about $900 million. For the first 11 months of 1953, the outflow of our gold was $1.14 billion, suggesting possibly something more than $1.2 billion in the calendar year. It would be idle to think that these dollars spent for gold might all have been spent for cotton. But, had they been, they would have bought some 7 million bales over what we actually sold.

It seems clear enough that when our prices are attractive and our foreign mill customers, calculating their costs in their own currencies, consider that they can well afford to buy our cotton, their governments find a way to let them have the dollars. But if the foreign mills can buy their cotton cheaper for other currencies, the governments quite willingly acquiesce and use the dollars for other purposes. Or they may in that case even permit dollars to be

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spent elsewhere for cotton. After all, it is now the foreign spinner who decides what growth he will buy; and what he looks at are the relative costs to him in his own currency of the various cottons available.

One pivotal factor in the outlook for American cotton that we have to recognize is the uneasiness that still prevails abroad over prices and price policies in the United States. As to our policies, the United States Government has repeatedly assured other governments and the trade abroad that no export subsidy would be applied this season and that foreign importers need have no fear that cotton they buy now will be cheapened in their hands later this season by action of this kind on our part. Nevertheless, our foreign customers see the world stocks increasing. They see our own production outrunning our disappearance, and practically all of the world's stock increase taking place in the United States. They know that this government has used export subsidies in the past to move cotton surpluses into consumption aboard. On these premises they reason that sooner or later similar action is likely to be taken again. So long as this state of mind prevails we can expect our customers to import only what they need currently and to end the season with minimum working stocks on hand.

Indications are that in this season foreign exporting countries will succeed in selling not only their current crops but also most of the stocks they have carried over from previous years. In fact, they are already well along toward this goal. The opportunities for American cotton exports thus may be somewhat improved in 1954-55.

Helping Others Helps Us

"Through research and extension, we are striving hard in the United States to get more efficient production, per acre and per man-hour. But in the production of many of the tropical and semitropical commodities, of which we are the world's greatest importer, we do not find comparable progress. As a result we often pay more for such commodities than is justified and, at the same time, the producing countries fail to attain their full income potential.

"I am thinking now of a commodity that stands as an example—coffee. We drink more coffee per capita than any other nation. Last year our coffee imports totaled $1.4 billion and represented one-third of our total agricultural imports. Our dollars spent for coffee gave our Latin American friends their principal means of buying from us—including the buying of our farm products.

"Coffee, today, is being underproduced. The world's coffee-drinking population is increasing constantly, but world production of coffee now is actually less than it was 20 years ago. Our consumers are unhappy about coffee prices. The prices we pay for coffee have gone up twice as fast as our farm commodity prices. Our farmers will have equal reason to be unhappy if, in the years immediately ahead, coffee fails to fulfill its great potential as a medium of exchange as Latin America buys our own farm products.

"The pessimistic coffee supply and price situation traces to a single fundamental fact: lack of technological improvement in the efficiency of production. There has been no substantial improvement in the production of coffee per man-hour for generations. . . . Our fostering of better coffee production not only can contribute to the economic development of our Latin American neighbors but also build markets for our own farm products.

"There also are many other products of foreign lands that we willingly bring into our country because they contribute to our standard of living. As we work with our foreign neighbors, I hope that we can be particularly aware of such potentials that help build mutual trade. We cannot, of course, confine our technical assistance efforts only to products that complement or supplement our own. In many underdeveloped areas, a first need is to help hungry people grow more food. But over and above the meeting of such basic need is the golden opportunity of helping to build the long-time, enduring trade that spells mutual prosperity."

Excerpted from the address given by Clayton E. Whipple, Acting Administrator, FAS, at 41st Annual Extension Workers Conference, Purdue University, December 10.

Under examination are three of the many thousands of rice samples being studied in the Thailand rice improvement program.

Rice Improvement in Thailand

by H. H. LOVE

Not only is rice the staple food for roughly half the people of the world but it is so in those very areas where population is increasing most rapidly and, generally speaking, where living standards are lowest. To millions of people, the daily bowl of rice is the thin dividing line between life and death. Plentiful supplies of rice are of tremendous significance—social, economic, and political.

Some of the largest rice-producing countries are unable to grow enough for their own ever-increasing populations and must look to rice-surplus areas to make up the deficit. For many years Burma, Indochina, and Thailand were the principal rice-surplus areas of the world. As a result of military and political upheavals in Burma and Indochina following the end of World War II, however, the Kingdom of Thailand emerged as the leading rice exporting nation.

Thailand, which is about the size of the State of Texas, is ideally suited to rice production. Its fertile central flood plain, generally available water supplies, favorable climate, stable government, and lack of population pressure on land resources are factors that make possible a potentially significant increase in rice exports.

In 1949 the Thai Ministry of Agriculture launched an extensive program to increase the quantity and quality of Thai rice crops. The Director-General of the Thai Department of Agriculture, on a visit to the United States during that year, presented the problem to the U.S. Department of Agriculture and requested American aid. The Department was interested and agreed to send Dr. R. L. Pendleton, a specialist in tropical soils, and I to Thailand to aid in the rice production project.

When we arrived in Bangkok in March 1950, we found that the Thai Government was studying these phases of the problem of increasing rice production: Irrigation and water control, use of commercial fertilizer, and plant improvement. It is with the

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last phase of the program that I have been associated, working with Dr. Krui Bunyasingha, a graduate of Cornell and Duke Universities, and his small but able group of Thai plant scientists.

The work of plant improvement has proceeded along three general lines: (1) Variety evaluation to determine the best of available varieties for given situations, (2) individual head or plant selection to obtain high yielding lines of good quality, and (3) cross breeding or hybridization followed by selection to produce new varieties with desirable characteristics.

More than 120,000 lines and types have been tested since the program began, and 10,000 of these were studied in 1953.

At the outset of the program, it was apparent that in order to carry out the necessary field work and evaluation, many more trained men would be needed. It was not practical to send them abroad for training, so it was decided to train them in Thailand by means of specially arranged short courses.

The first course was held in October 1950 and attended by about 80 persons, including Thai Government officers and agricultural college students. The course was designed to train men in the techniques of plant breeding and in the conduct of field experiments with fertilizers, and variety and strain tests. Considerable material on such basic subjects as nature of soils, use and value of fertilizers, plant breeding, field plot techniques, design of experiments, and statistical methods was presented.

Results of the first course were so encouraging that the course is now an annual affair, held in February and March, to enable officers to complete their post-harvest field work before the course begins.

Many officers have returned year after year, which has resulted in a group with progressively improved skills in the science of plant breeding. There is reason to believe that the work will be continued after American technical aid is withdrawn.

Variety Evaluation

Our problem of evaluating rice varieties in Thailand was made difficult by the need, in the various areas, for early, medium, and late-maturing varieties; for upland, paddy, and deep-water rice; and for glutinous and nonglutinous varieties. With these complications in mind, six experiment stations were set up in localities typical of the varying environmental conditions of the Kingdom, and plans were made for careful field tests over a number of seasons.

Varieties used in the earlier tests were those obtained from farmers and agricultural officers, together with the standard varieties already developed by the Thai Ministry of Agriculture. Now, seed is also obtained from the prize winning varieties shown at the annual Thai rice show. In all, more than 2,000 samples have been received from individuals and government stations throughout Thailand, and about half were selected for planting last year in replicated rows to determine the better yielding types.

Varieties from other countries have been tested, too. In response to our requests, seeds of more than 1,200 varieties have been sent from Cambodia, India, Indonesia, Japan, Laos, Taiwan, the Philippines, Vietnam, and the United States. About 600 of these varieties were included in the field trials in 1953.

Differences in yield between varieties are quite striking. For example, of the 34 varieties tested at Bangkhen, near Bangkok, in 1951-52, the highest yielding sort averaged 3,329 pounds per acre, while the lowest yielding averaged only 1,852.

The number of variety tests conducted at the stations has increased from 9 in 1950 to 21 in 1953. In addition to these regular variety and strain tests at the main experiment stations, a number of regional variety tests are conducted each year on farms. In these tests about 20 varieties are compared. About 5 of the best local varieties are included in the farm tests. The number of these tests has increased from 12 in 1951 to 29 in 1952, and more than 50 in 1953.

The regional trials enable farmers in the community to visit the experiments and see for themselves the difference between varieties.

Just as rapidly as we can carry out tests on yields and so to determine the best varieties for each locality, these varieties will be multiplied and seed made available to farmers, who will be encouraged to raise only the high-yielding varieties of good quality.

Selection

In any field planted from unselected rice, there will of course be literally thousands of individual plant types—some good, some fair, and some poor. In selecting plants for testing, the best plants cannot, unfortunately, be determined by inspection alone, for such complicating factors as fertility of the particular spot in the field are always present. The chance of finding some worthwhile, high-yielding sorts depends on making a large number of individual head or plant selections from many fields and from different areas. Because rice is largely self-fertilized, it is usually not possible to change the type of plant by continuing to select individuals from the offspring of a single homozygous plant. This means that the first selection is all-important, and thousands of plants are needed for study and observation.

With these facts in mind a large-scale selection project was begun in 1950. At the end of the first short course, special instructions in making head selections were given to field officers who volunteered to help with the selection project. Each man was asked to visit about 20 fields in his locality and select 100 to 200 heads from each field. They sent in about 120,000 selections from 978 fields in 35 different localities. This gave us much valuable material for beginning our selection program.

At the Rangsit Station, each head was placed in a separate envelope and labeled as to type, local variety name, and source. Since we lacked facilities to grow selections in all the localities from which they originated, it was decided to group them according to general area and plant them in our main experiment stations. This we did the following year—in 1951. Insofar as possible, direct planting, instead of transplanting, was used, to simplify maintaining the identity of each of the more than 114,000 selections planted.

Seeds from each head selection were planted about 4 inches apart, one to the hill, in rows 10 feet long, with 1 foot between rows. Insofar as possible, the selections were grouped according to maturity type. As a check, each tenth row was planted with a standard or well-known variety of the same maturity type as the material being tested.

Fields were visited frequently, and careful notes taken at different stages of growth. The check rows made it possible to determine when good or poor performance was due to local fertility or other environmental conditions, rather than to inherent qualities of the new selection.

Seeds from selected rows from the 1951 crop were saved for continuing the study in 1952. With more seed available, it was now possible to have replicated rows of each selection. The plan followed was to plant, at a particular station, rows of all

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กรมเกษตร
ร่วมกับ
Head Selections

Heads of rice are carried from selection plots for examination. Those that show promise will be tested further and, as soon as satisfactory new varieties have been developed, seed will be distributed to Thai rice growers.

material to be tested, then, to repeat the series at the same station. In order to have more information regarding performance in different localities and as insurance against loss in one locality, a third replication was grown at a different station. A total of 22,553 selections were grown in the six stations in 1952.

Again, promising sorts were selected for continued study in 1953. With replications, it was possible to obtain more accurate data and a number of interesting facts. One such fact was that there was a marked difference in performance of selections of the same variety originally taken from the same field. It was found that progeny of heads selected from the same field in 1950 varied in yield as much as 42 percent when grown under identical conditions in 1952. It is apparent that there are heritable differences in yielding ability present in these different lines.

Another interesting observation was that selections from one locality often tended to yield far better than those from another. For example, our 1952 tests showed that selections from a variety from one particular locality yielded from 30 to 78 percent more than the check, while material from quite a different locality gave yields between 12 percent above and 15 percent below the check. Again it was observed that there were wide variations in the performance of individual heads of the same variety from the same source.

These results naturally point up the importance of having an extremely large number of selections from many sources. Only one head out of hundreds or thousands may lead to an outstanding type. This is a challenge to the plant breeder to keep selecting and testing, looking for material with real merit.

Study of some 10,000 of the more promising selections was continued in 1953. Insofar as possible, 5 replications of each selection were planted, with every tenth row again used as a check.

With a selection program it is not wise to depend upon one collection of material. If new collections can be made every second or third year, it is possible to make selections from new localities as well as more from those areas from which outstanding sample have been obtained in the past. With this in mind, about 90,000 new head selections were made in Thailand in 1952, and were grown in experimental plots in 1953.

Hybridization

Line selection in rice is an important technique for obtaining better producing sorts, yet selection alone does not produce anything new. It simply sorts out of a population the best of what is already there. When special new types of plants are needed, a program of hybridization must be begun to enable the breeder to combine in a new plant desirable characteristics of different varieties or lines.

Thailand is one of the countries participating in an international rice hybridization program sponsored by the Food and Agriculture Organization of the United Nations, involving crosses of japonica-indica varieties. At the meeting of the International Rice Commission held in Rangoon in 1950 it was decided to center hybridization work at the Central Rice Research Institute at Cuttack, India.

Thailand sent 4 varieties to Cuttack in 1950, and has sent several others since. Fifteen crosses were made for Thailand and about 60,000 F1 seeds sent back for planting in 1952. Experience has shown that the japonica type grows better in northern Thailand than in the central plain, so most of the seeds were planted at San Patong, near Chiengmai. A large number of F2 plants were obtained for further study in F3. Thousands of plants were grown in short rows in 1953, and will furnish much material for further study and selection.

Another series of crosses made at Cuttack were planted at San Patong in 1953 and will furnish material for F3 planting in 1954.

In addition to studying and testing the Cuttack material, it is planned to make crosses in Thialand. For these crosses, some of the same Thai varieties may be used along with other sorts, as well as some special types obtained from the many different varieties now being grown in our experiments. It may well be that more and more plants from various crosses will tend to make up the bulk of the strains that will be under test in a few years.

In the meantime, variety evaluation and selection will be continued along with the hybridization phase of the program, with the hope that after a few years of investigation some new highly productive sorts of good quality rice will be made available to Thai farmers. Such a program cannot be completed in 2 or 3 years. Several generations of plants need to be grown and all varieties and selections must be thoroughly tested before worthwhile recommendations can be made.

CONFERENCE OF FAO, Seventh Session
CONFERENCE DE LA FAO, Septième Session
CONFERENCIA DE LA FAO, Sèptimo Per. de Sesiones
Rome 23 November 1953 – PUBLIFOTO –
FIAT PANIS
UNION OF SOUTH AFRICA
VENEZUELA
U.S.A.

By THOMAS E. STREET

The Seventh Session of the Conference of the Food and Agriculture Organization of the United Nations was an important landmark in the development of FAO. Meeting in Rome from November 23 to December 11, the Conference marked the tenth anniversary of the meeting at Hot Springs, Va., at which FAO originated. It was held in the year when, for the first time since World War II, world agricultural production caught up with world population growth. It approved the first major increase in the budget of FAO. And it inaugurated a new Director-General—Philip Vincent Cardon of the United States.

The Conferences of the full membership of FAO —71 members this year—are now held every 2 years. They chart the course for national and international food and agriculture policies and the programs of FAO for the ensuing 2 years. Between Conferences, however, the policies and programs are reviewed and adjusted by the 24-member Council of FAO.

That world agricultural production has caught up with world population growth was a matter of some satisfaction to the Conference. For the Conference of 1951, faced with the realization that population was growing faster than food production, had set a general goal for an increase in agricultural output of 1 to 2 percent above the rate of population growth. That goal, then, had been realized. But the recent Conference was not complacent; rather, it was deeply concerned about the world food picture, because the wide disparity in consumption levels in different parts of the world show little sign of diminishing.

True, statistics show that food production has caught up with population growth, but nearly half the increase in world food output since 1934-38 has occurred in North America; output in the Far East, for example, is still little above its prewar level. And, as the old maxim goes, "You don't eat statistics."

This situation brought to the fore another of major concern—the large stocks that have accumulated, particularly in North America.

The twin problems of insufficient production in some areas and excess production in others prompted the Conference to launch a two-pronged

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attack: one toward a selective expansion of production plus increased consumption and the second toward disposal of agricultural surpluses without harmful interference with normal patterns of production and international trade.

Selective expansion of production calls for a wide variety of policies and activities on the part of member governments in consultation with FAO and with neighboring countries. To achieve FAO's long term objectives, measures to expand production must, the Conference realized, go hand in hand with active, positive steps to raise consumption levels. To this end the Conference emphasized measures by member governments to reduce costs of production and distribution—such measures as improved research and extension services, greater availability of credit to farmers, improved security of tenure, reduced costs of agricultural requisites, lower import duties or domestic taxes, improved transport and marketing methods, and special consumption programs.

Disposition of agricultural surpluses received a great deal of attention at the Conference. Many member governments feared that efforts to move surplus products into consumption channels might drastically depress world market prices. In this connection the Conference commended the United States for its adherence to the safeguards against interfering with normal patterns of trade that are written into Section 550 of the United States Mutual Security Act of 1953.

The concern of member governments over this surplus disposal problem found expression in a decision to call a meeting of a Working Party of FAO's Committee on Commodity Problems. The eight countries that form this Working Party are to meet in Washington late this month to consider the most suitable means of disposing of surpluses and the principles that should be observed by member nations to avoid harmful interference with normal patterns of production and international trade.

Another item on the agenda of the Conference that attracted a great deal of interest was the question of establishing an international reserve, or a fund, for famine relief. This question had been studied by the Council of FAO and by two groups of experts in accordance with a resolution of the preceding Conference. The recent Conference determined that the creation of any famine reserve was impracticable in the absence of evidence that member nations would be in a position to provide the necessary stocks or money. (The groups of experts had concluded that a reserve of food was impracticable in any case.)

The Conference reaffirmed its belief in the procedure agreed on by the preceding Conference, which authorizes the Director-General to investigate a developing famine or serious food shortage and, if he thinks it necessary, to call a meeting of the Council of FAO or of interested governments to work out ways to provide famine relief. The Conference commended the action of the last United States Congress that permits the President to use up to $1 million worth of United States stocks for relieving famines affecting friendly peoples. The Conference felt that if other nations could take similar steps a great contribution would have been made toward meeting immediate famine needs.

The establishment by this Conference of a budget level for FAO of $6 million for each of the next 2 years marked the first really substantial increase in FAO's budget since it was first set at $5 million in 1945. The $6-million figure was a compromise. The Director-General and some governments had wanted a higher figure. Other governments, including the United States, had felt that a lower figure was as much as they could finance.

The election of Philip V. Cardon as Director-General was a tribute to his devotion to FAO and to his competence and leadership as an agricultural administrator. He was for a number of years administrator of agricultural research in the United States Department of Agriculture. He succeeds Norris E. Dodd of the United States, who has been Director-General for the past 5 years.

A great many other questions of program, constitutional points, administration, and finance were acted on by the Conference. It had prolonged discussions, for example, on FAO's programs of technical assistance and reform of agrarian structures before approving them with recommendations on the direction they should take in the next 2 years.

The United States Delegation, in addition to Dr. Cardon, included Assistant Secretary of Agriculture John H. Davis, Administrative Assistant Secretary of Agriculture Ralph S. Roberts, and key representatives of the Departments of State and Agriculture. They felt that this Conference was one of the most useful and constructive held thus far, even though they did not get all of their points adopted in just the way they had intended. That, however, is part of the business of international action.

Relations Between the United States and Latin America

The following are excerpts from the recent report to the President by his Special Ambassador Milton S. Eisenhower, who last year made a study of our relations with Latin America.

Stable, satisfactory relations between the United States and the nations of Latin America are vital as we seek to build a cooperative peace characterized by freedom and rising levels of well-being.

The Economic Aspect. The trade of the United States with the Latin American republics was about $3.5 billion in each direction in 1952.

As a market for our commercial exports, Latin America is as important to us as all of Europe and more important than Asia, Africa and Oceania combined. Our sales to Latin America encompass the entire range of our national production. As a source of United States imports, the Latin American republics have even greater relative importance, standing well ahead of Europe or the other continents.

Reciprocally, the United States is of key importance to every one of the Latin American countries, both as a market for their products and as a source of essential imports.

The copper, tin, zinc, iron ore, manganese, and other minerals which we obtain from Latin America are vital constituent parts of the machinery which we in turn ship there. The dollars we provide through purchases of coffee, sugar, tropical fruits, and wool, as well as metals, finance their purchases of transportation and industrial equipment and consumer goods. The industrial and military items which the United States turns out to help defend the free world, including the American republics, require a continuing supply of a great variety of strategic materials from Latin America.

Such trade is mutually advantageous. . . .

The economic well-being of every section and every special interest group in the United States is affected by our relations with Latin America. The dollars she gets from her sales here are used largely for direct purchases here. If, because of tariff or other changes, we should buy less from any of the countries to the South, their purchases from us would decline. The effects of such change would be felt in every part of our country.

Unfortunately, the people of the United States do not seem generally to comprehend the full significance to us of stable economic relations with Latin America; moreover, some of our actions have caused leaders in those countries to adopt the mistaken view that we turn our attention to them only in times of crisis.

On the other hand, many Latin Americans appear to disregard the importance to them of their economic relations with the United States. The fact is, of course, that our market is indispensable to the well-being of the other American republics. Our record is such that, no matter how disturbed Latin Americans become over some of our trade and tariff policies, they do have considerable confidence in our basic fairness in the conduct of international trading. However, this preponderant importance of United States consumption as regards so many Latin American products is precisely the reason why our actions, however minor they may be in our view, can have such significant effects on the economics of other republics in the Hemisphere. . . .

Regarding Economic Development. . . . no one could return from a trip such as ours without deep feelings of faith and optimism in the future of Latin America. The outstanding impressions left with us are of the tremendous vitality and activity found everywhere. . . .

Human and physical resources are great. A rapidly growing population of willing and active workers is an asset, though promising to be a problem unless production, especially of foodstuffs, is substantially increased. New leadership in business and agriculture has manifested itself in many countries. There is a growing awareness of the many things which must be done if the aspirations of the people for a better life are to be achieved.

The vast agricultural and mineral resources of Latin America are only partially developed. If the energies of people are properly joined with capital, with incentives for self-betterment, and with stable political and economic conditions, we shall witness enormous agricultural, mineral, and industrial development in Latin America in the next twenty-five years.

One profoundly significant fact which will affect Latin America in its long-time future, but which was seldom mentioned to us by the leaders we interviewed, is the growth of the population. In 1950 the population of Latin America exceeded that of the United States for the first time since the colonial era. In each decade since 1920, Latin America's population has risen at a progressively faster rate. The present rate of 2.5 percent per year exceeds that of any other major region of the world and is at least twice the world average.

If this rate continues, Brazil's present population of 53,000,000—already more than that of the United Kingdom or of any Latin nation of Europe—will double in about 35 years. Within 50 years Latin America's population, now about equal to that of the United States and Canada, may reach 500,000,000, or double the total anticipated for the latter two countries.

The future problem is even greater than is suggested by these figures, for the rapid introduction and spread of public health measures will have an appreciable effect on the death rate. As malaria, yaws, typhus, tuberculosis, and other diseases are conquered, the rate of population increase may well accelerate. We visited numerous health projects and learned how malaria is being eliminated by spraying with DDT and yaws is being conquered by the use of penicillin. In every country we found determined efforts to reduce or eliminate diseases which for centuries have plagued South America.

Thus, the problem is not merely that of increasing production to improve the lot of the existing population—and in the countries we visited the per capita annual income ranged from a low of less than a hundred dollars a year to a high of about four hundred dollars a year. The problem is also to win a race with growing numbers. If the contest is to result in a higher average standard of living, increases in production must appreciably outstrip population growth.

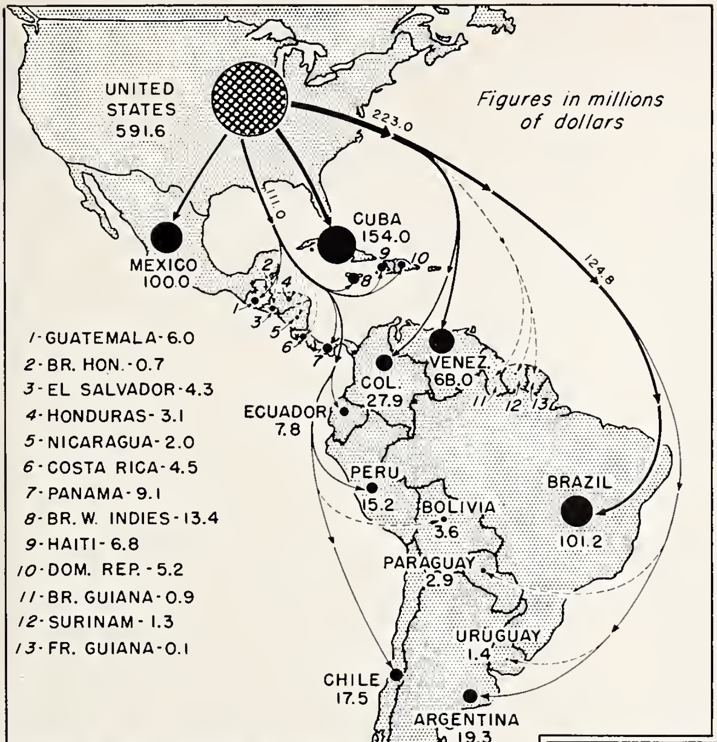
Fortunately, since the war the annual increase in production has averaged nearly five percent. Thus, despite the rapid growth of population, an over-all increase of approximately 2.5 percent in per capita output per year has been achieved. This compares with an average annual per capita growth of 2.1 percent in the United States during the period 1869–1952. . . .

The export economics of most of the other American republics have been built around their ability to provide certain primary materials for consumption in the United States and Europe. Their supply of imported consumer goods and other materials depends upon their ability to sell these products to the rest of the world. This has been a major reason for the intense desire of the leaders to industrialize and diversify the economies of their countries. We encountered everywhere a widespread desire for steel mills, metal fabricating plants, food processing plants, textile industries and a wide variety of consumer-goods fabricating facilities.

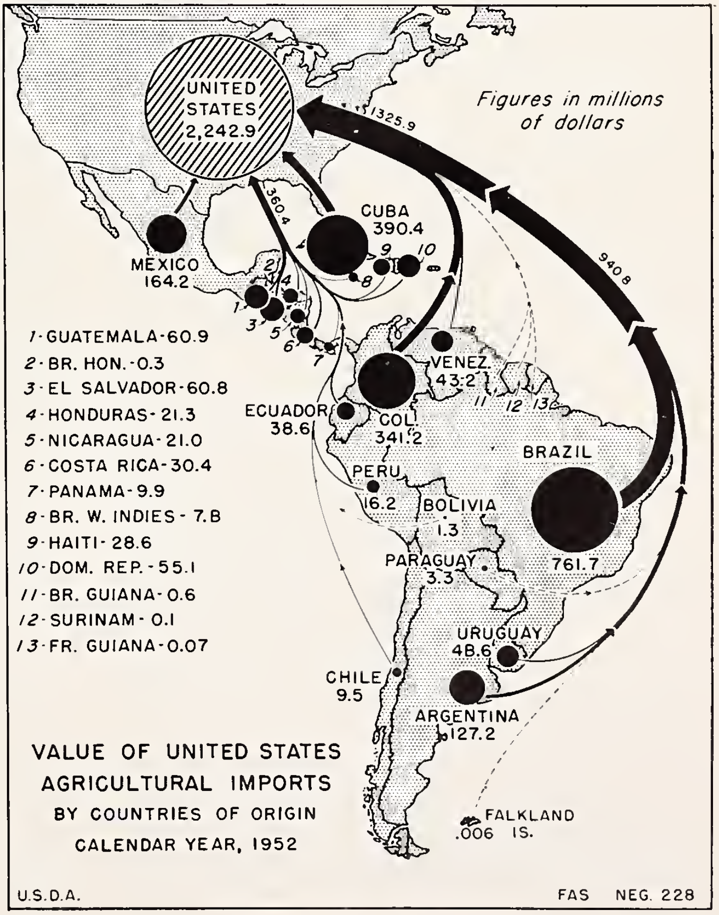
Industrialization has gone so apace in some countries, notably in Brazil and Chile, that it has out-stripped the production of food and fiber, as well as the fundamental services of transportation, communication and power. This imbalance has been recognized, but it is difficult and will take time to correct. It is a serious road-block in the way of balanced economic development.

On the basis of our observations we believe that the much-needed balance in economic development will be more rapidly and soundly achieved if the relatively free play of market forces and competitive-price mechanisms are allowed to operate in all countries, as they are now operating in several countries of the continent. The allocation of resources, labor, and capital will then be permitted to occur in the interest of efficient production, distribution, and consumption, and at lower prices.

This is particularly pertinent with regard to the pressing need in most Latin American countries for a rapid increase in food production. Larger, more efficient production is absolutely basic to the continent, but agricultural improvement is usually a relatively slow process. In Latin America, improvement in farm production calls not only for price incentives (to which we shall refer again), but also for the establishment of



VALUE OF UNITED STATES AGRICULTURAL EXPORTS
BY COUNTRIES OF DESTINATION
CALENDAR YEAR, 1952



VALUE OF UNITED STATES AGRICULTURAL IMPORTS
BY COUNTRIES OF ORIGIN
CALENDAR YEAR, 1952

agricultural research stations and extension systems, for far-reaching programs in fundamental education to decrease illiteracy in the rural areas, and for capital to finance the purchase or importation of machinery.

We were encouraged by what we saw on our visit to the modern, effective agricultural experiment station and agricultural college at Palmira, Colombia—projects aided by the United States in the technical cooperation program. We were similarly stimulated by what we saw of the work of SCIPA in Peru and STICA in Paraguay—outstandingly successful examples of our technical cooperation. Indeed, in every country we visited where our technical program is operating, we saw evidence which convinced us that the funds the United States is putting into "servicio"-managed agricultural projects is one of the best expenditures made by our Government. At long last science is being introduced to the agriculture of the entire continent. One new variety of corn will produce four times as much as the native variety. Research in genetics, entomology, livestock selection and breeding, fertilization, crop rotations, conservation and so on is showing spectacular results. And the discoveries in the stations are already being applied on many farms, though general adoption may have to await progress in fundamental education to decrease illiteracy, the building of practical extension services, and the widening of rural vocational training.

Agriculturally, Latin America is today reminiscent of the United States in the late 19th century. Primitive and inefficient practices are just beginning to be replaced by modern scientific farming.

Major credit for the accomplishments to date belongs to the local peoples and their governments, and of course theirs is the major task in the future. The technical assistance we have provided has been of enormous help. United States specialists in all branches of agricultural science have been skillful in training local leaders in research and extension work. Now many American republics have agricultural colleges for the training of expert personnel.

Fortunately, several of the countries recognize that to stimulate domestic food output they must restore the incentive that can flow from the price mechanism. Through inflation, price controls, and subsidy exchange rates, some governments have greatly discouraged domestic agricultural production and encouraged the use of scarce foreign exchange for food imports. So serious has this been that some countries which formerly produced enough of such products as wheat and sugar to meet most of their domestic requirements have recently been importing more and more of these very commodities.

Ceilings placed on domestic prices of foodstuffs as an emergency attempt to control inflation have exerted a regressive influence on domestic producers. Especially favorable exchange rates for food imports have sometimes made it impossible for the local farmer to compete. This has led in some instances to situations of sheer folly—to scarce foreign exchange being used to import food which in turn has been illegally reexported in large volume at good profit by contraband traders.

Such policies have caused a shift in land resources in the affected areas from much-needed production to less economic and less basic production. As a result, the real standard of living of the people has suffered. Such policies also tend to vitiate, temporarily at least, the positive benefits of United States technical cooperation in agricultural experimentation and demonstration, and work against the usefulness of loans which have been extended for agricultural machinery, irrigation, and related purposes.

In view of the foregoing, we were indeed encouraged to learn from a number of governmental and financial leaders that they have become aware of the self-defeating nature of the policies which have been followed in some countries and that they are taking steps to make possible more realistic domestic prices and exchange rates for agricultural products. . . .

I specifically recommend:

(1) That the United States adopt and adhere to trade policies with Latin America which possess stability, and with a minimum of mechanisms permitting the imposition of increased tariffs or quotas. I consider this matter of stability and consistency the outstanding requirement.

The nations of Latin America pay for what they obtain from us. Their purchases from us are governed almost wholly by the volume of our purchases from them.

Occasionally the importation of a particular commodity may cause temporary difficulty for one of our industries. But if we raise the tariff on that commodity, the export sale of other United States commodities is certain to decline. The question then becomes: which United States industry, if any, should be temporarily disadvantaged? And the change in our tariff may seriously weaken the entire economy of a Latin American nation.

In a mature economy, and especially in a creditor country, it often develops that policies which are clearly in the national interest are nonetheless detrimental to one or more economic groups. This fact is not peculiar to problems of trade with Latin America. A solution to it would be widely beneficial and would enhance the probability of maintaining stable economic relations between the United States and Latin America.

(2) That the United States adopt a long-range basic-material policy which will permit it to purchase for an enlarged national stockpile certain imperishable materials when prices of such materials are declining.

We import from Latin America many minerals and other primary products whose prices on the world market are subject to wide fluctuation. To a country which sells the products of its mines and then purchases processed goods and food from abroad, a sharp decline in the price of its minerals can be calamitous, leading not only to lower standards of living, but also to political instability. . . .

I recognize that the implementation of such a policy would presumably have to await the time when United States fiscal resources are not severely strained by defense expenditures; further, this policy is now partly in effect in the defense stockpiling program.

(3) That the United States carefully examine whether or not it would be appropriate to amend present tax laws to remove existing obstacles to private investment abroad.

(4) That public loans for the foreign-currency costs of sound economic development projects, for which private financing is not available, go forward on a substantial scale, provided, of course, that the borrowers take the necessary measures to ensure that they are good credit risks. . . .

(5) That the United States stand ready to give appropriate technical help to the Latin American countries that express a desire to work out more orderly ways of determining how their resources can make the greatest contribution to their economic development. . . .

(6) That, in very unusual circumstances, the President of the United States be in a position to make grants of food from our surplus stocks to Latin American countries.

Everyone recognizes the validity of food grants to meet problems caused by famine. But a no less serious human emergency exists when a nation which normally imports a substantial percentage of its food is unable to buy and its people are on the verge of starvation.

If food grants should be made, it would be appropriate to require the government receiving the grants to set aside counterpart funds, equal to the value of the grant, to be used in expanding its domestic agricultural production.

(7) That the technical cooperation program in Latin America be expanded.

The provision of expert technical assistance has been and continues to be an effective method of helping the people of Latin America attain better health, higher industrial production, better education, improved agricultural production, and higher standards of living. It has made firm friends for the United States . . . throughout the Hemisphere.

We should continue the "servicio" type of administration—a device in which local people and United States technical personnel share responsibility for the work.

The consultative part of the task should, wherever possible, be assigned to an American university which . . . is willing to assume the responsibility for technical guidance. . . .

In each "servicio" project, the policy of the United States should be to withdraw when that project has become well established, local personnel have been trained, and the local government is able to carry on. Thus, when an agricultural experiment station or a health center has been operating successfully for a time and local personnel are ready to take over full management, United States funds should be put into a new project where a pioneering contribution can be made. . . .

(8) That we continue our vigorous support of the various technical agencies operating as an integral part of our activities in the Organization of American States. . . .

(9) That our Government also continue to support the work of the International Monetary Fund which has extended helpful short-term financial aid and valuable technical assistance to the nations of Latin America on their monetary and exchange problems. We should also give continuing support to the work of United Nations agencies such as the Economic Commission for Latin America, with headquarters in Chile, which is helping the Latin American Governments to further their economic development through use of their own resources.

Finally, I urge the Administration, the Congress, and the people of the United States to take a long-range view as we consider how we may strengthen our economic relations with the nations of Latin America. . . .

There is no doubt in my mind about the future of Latin America. Her people are on the march. They are determined to improve their standards of living. They have the resources and the manpower to do so. . . .

In the long view, economic cooperation, extended to help the people of Latin America raise their level of well-being and further their democratic aspirations, will rebound to their benefit and to ours.

Cyprus Controls Its Free-Ranging Goats

By HENRY S. KERNAN

The symbol—and the perpetuator—of the widespread, thorough soil erosion of the Middle East is the free-ranging goat. Long ago, farmers whose lands were too poor for cultivation turned to raising goats, for goats survive on land so barren that they appear to be the only living creature. As the goats multiplied in number, the problems of soil erosion multiplied, for goats eat every green sprig and pound the soil to dust.

One Middle Eastern country that has undertaken an all-out campaign against goats, with notable success, is Cyprus. Thirty years ago, Cyprus was one of the most overgrazed and overeroded pieces of land in the world. Today, it is fast becoming a workshop of progress in these problems.

The island of Cyprus lies in the northeastern corner of the Mediterranean Sea, 40 miles south of Turkey and 60 miles west of Syria. Its climate is typically Mediterranean; summers are long, hot, and rainless and winters mild with occasional torrential rains.

In 1878 Cyprus emerged from three centuries of Ottoman rule, with an impoverished peasantry and a tradition that permitted free use of public resources to the extent that each man could take and exploit by force or guile. The British brought improved standards of public health and law enforcement, and the population began to grow rapidly. But as it grew the problem of food became more and more serious, for the land was losing its capacity to produce. The forests were burning up. The streams were either torrents or dry beds. The great central plain, the chief granary of the island, was becoming drier and more barren every year, and thousands of goats ranged over it freely.

Laws to control the goats were enacted, reports were written, and speeches were made, but all these efforts failed because no move was being made to solve a related, and equally important, problem: goat raising was the only means of livelihood for the numerous shepherds.

By 1933, after 55 years of official interest in the problem of goat grazing, almost no progress could be measured.

That year, after several exhaustive enquiries and several drastic changes in policy, a workable plan was evolved and the Forest Department began its administration.

Legal basis for the plan was a law enacted 20 years earlier, which provided that any village may, by a majority vote of the land-owning and goat-owning citizens, exclude free-ranging goats from the village lands; after the exclusion each family could keep but three goats and these had to be tethered.

The first move under the new plan was to register shepherds, license them, and guarantee security in their traditional rights. Next, a special fund was set up to buy these rights from shepherds who wished to sell. Soon, many shepherds were selling them and the Forest Department was absorbing more and more men into the force of forest guards, woodcutters, roadbuilders, and tree planters, giving preference to local people. At the same time, the Forest Department, with the help of the Agricultural Department, encouraged villagers to raise sheep instead of goats and to use better breeds of both. Foresters, who were themselves villagers, were sent to village coffeehouses to explain the plan and discuss it.

World War II gave the plan impetus, for men found employment around the military camps and the ports, and in the growing industries of the island, and, of course, many of them went to war.

After the war the Forest Department undertook an expanded program of road building, construction, and reforestation under a Colonial Development and Welfare Fund. This program gives work to local people in the valleys and mountains that they are loath to leave.

Today, 98 percent of the mountain forests are free of grazing and 30 percent is fully productive.

Only 45 percent of the island as a whole is free of goats, for herds still graze over the stubble and fallow wheat lands of the Mesaoria Plain. But

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Mr. Kernan is Forester, Point Four, American Embassy, Tehran, Iran.

Villagers of Cyprus' Mesaoria Plain travel miles to the hills for firewood. Soon they can cut it at home from recently planted village forests that, thanks to the new goat control program, are safe from marauding goats.

there, too, the Department's plan is meeting with success. The long-time shortage of fuel has been the problem foresters have focused on to gain cooperation.

Fuel has been in such short supply that villagers have traveled miles to the hills to collect a donkey load of faggots. Yet, the Department pointed out, the villagers could grow fuelwood nearby on numerous patches of rough untillable land, if they protected the trees from goats. Now, they are doing just that, with the guidance and payments of the Department. More than 5,000 acres have been planted and are being protected in 93 areas.

If the goats are so destructive and the benefits of their control so obvious, why is only 45 percent of the island free of them? The answer lies partly in the character of the land and partly in the traditional farming practices of the people.

Cyprus is not a country of grasses, but of weeds, shrubs, and brush. In the burning midsumer heat, grasses shrivel and die, springs dry up, stream beds are empty, and the soil is baked to rocky hardness. Such conditions are not suitable for cattle and are less than ideal for sheep. But goats thrive.

The villagers have always looked on goats and sheep as scavengers. Oxen are often housed with the family; they are fed all night and become sleek and glossy. Other work animals receive special care, and Cyprus donkeys are among the finest in the world. But goats and sheep are expected to wander about picking up what food they can. Their owners turn them over to the village shepherd for a small fee, and whatever the animals produce is nearly all profit. Why waste good land for fodder or forage?

This practice of turning animals loose to forage on their own is of course not unique in Cyprus. In many other areas of the world the practice from time to time has seemed the expedient one to follow. In the United States, during pioneer days, farmers turned their cows loose in the forest; the cows yielded only a few quarts of milk a day but since there was no expense involved and no market incentive, what difference did it make?

Generally, however, most countries have come to consider this practice uneconomic; and in this respect, too, Cyprus is no exception.

As a result, it has cut nearly in half the burden imposed on it by the free-ranging goat—an accomplishment that omens well for the island.

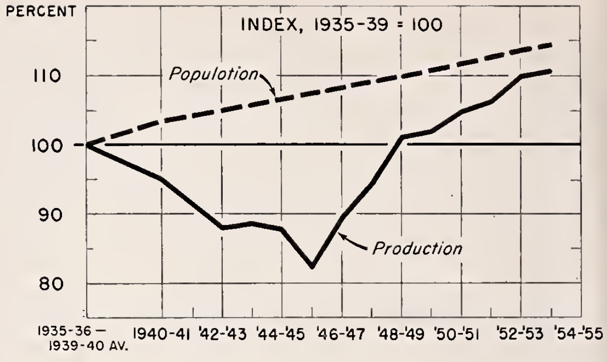
World Agricultural Situation, 1953-54

For the sixth year running, the world's agricultural production is exceeding the average it set for the years immediately preceding World War II (1935-39). In fact, so steady and persistent has been the increase in agricultural production since 1948 that it is well on its way to catching up with the rate of population growth; and the world again is eating about as well as it did before the war.

That is the analysis and conclusion presented by the United States Department of Agriculture early this year in its summary of the world agricultural situation[1]. Country by country, and commodity by commodity, this summary explores the facts throughout the world not only for feed products but for such nonfood products as tobacco, cotton and other fibers, and industrial oils.

The summary points out that the world food production in 1953-54[2] appears to be at a record height. Rice, sugar, meat, animal fats, and citrus fruits are being produced in unprecedented quantities; wheat, potatoes, beans and peas, edible vegetable oils, and dairy products, though not at record levels, are still high. On the whole, these major food commodities, which make up about 80 percent of the world's food, are this year being produced at a level that is 10 percent higher than the 1935-39 average.

Population, however, has increased even more: there are now 15 percent more people to be fed and clothed than there were before the war. But this fact, the summary says, does not necessarily mean that per capita consumption of food and fiber is less than it was before the war. Although the major food items still fall behind population growth, certain other foods, for which world estimates are not available, are being produced in much greater quantities than they were before the war. Still another compensating factor is the more efficient utilization of foods that has grown out of the scarcities of wartime. Besides, the feeding of livestock has become more efficient, and increasing quantities of coarse grains are being used as food. It is likely, therefore, that per capita consumption now is not greatly different from the prewar average.



The gap between population and food production, as expressed in rates of increase, is gradually closing. The production curve shown here is the average for eight major food groups: Cereals, sugar, fats, potatoes, pulses, fruits, meats, and milk. The first four groups have generally been a little higher than the average; the last four, a little lower. The average has been computed as the edible portion of the foods represented, weighted according to calorie content. (Adapted from chart in *World Agricultural Situation 1954.)*

Various economic circumstances have prevented a balanced distribution of the world's expanded agricultural output; and surpluses are building up in some exporting countries, just as they did in the prewar period. These mounting surpluses and accompanying price declines without corresponding decreases in production costs, together with the fact that some countries have announced plans to limit production of some commodities, all indicate that world agricultural production may be about to level off. In fact, outturn in 1953-54 is only slightly above that of the preceding season and may mark the beginning of a new slope to the production curve.

In reviewing the facts for each major commodity group, the summary points out that the world's wheat crop in 1953-54 is estimated at a little more than 7 billion bushels—a little less than in 1952-53 but still a billion bushels more than the prewar average. This, together with large carry-in stocks, makes for a record-breaking supply. The rye crop also is smaller than in 1952-53 but is materially less than the prewar average. This year's rice crop, estimated at 126 million short tons, sets a new record, topping last year's, which was 1 million tons less.

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[1] *World Agricultural Situation, 1954,* Foreign Agricultural Service, For. Agr. Cir., Jan. 11, 1954.

[2] The 1953-54 season in the main includes the 1953 harvest already completed in the Northern Hemisphere and the harvest yet to be completed in the next few months in tropical areas and the Southern Hemisphere. For livestock products it includes production in the 1953 calendar year.

World production of centrifugal sugar reaches a new high this year—39 million short tons, 37 percent above the 1935-39 average. This peak has been accomplished even in the face of restrictive measures in Cuba and Puerto Rico to hold down production. World stocks of sugar are high.

Production of fats and oils is of near-record proportions this year, partly because the olive crop in the Mediterranean Basin is larger than last year, and partly because Asia and Africa are producing more peanuts, soybeans, and palm oil and kernels than they did last year. Production of animal fats in 1953 was slightly larger than it had been in 1952, even though reduced hog slaughter in the United States cut down the production of lard.

Production of potatoes has yet to reach the prewar average, but this year's crop of more than 8¼ billion bushels comes close to doing so. Beans and other pulses together make a total that is 4 percent above the prewar average.

Citrus fruit will reach a new record this year—15½ million short tons. Apples and pears are substantially less than in preceding years but still above the prewar average. Another short crop of grapes is indicated.

Overall production of milk in 1953—516 billion pounds—was a little higher than the level it had maintained during the 3 preceding years; but consumption of fluid milk remained about the same. A sharp increase in dried milk production was offset by a reduction in canned milk. Butter production was substantially higher than it had been for several years, and cheese showed a moderate increase over 1952.

Meat production set a new record in 1953—81 billion pounds. This was 4 percent above the previous record, in 1952, and 16 percent above the prewar average.

Corn and barley crops are below average in 1953-54; but the large carry-in stocks of coarse grains and good supplies of other feeds indicate that present levels of milk and meat production can be maintained.

Even coffee and tea continue on a high level. Cacao, however, source of cocoa and chocolate, still has not returned to the prewar level.

Production of nonfood items continues high, too. This year's cotton crop is the third exceptionally large one since 1950. At nearly 37 million bales it is 15 percent above the prewar level and 3 million bales above recent consumption levels. Even at the start of the year there was a large carry-in, and surplus stocks continue to accumulate. Wool, reflecting the large Australian production of this year, sets a new high—nearly 4½ billion pounds.

Jute production has fallen off sharply, but the hard fibers—abaca, henequen, and sisal—together make up a record supply.

Tobacco production in 1953 was somewhat below that in 1952. At only 12 percent of the prewar level, it is not quite able to maintain the per capita consumption of prewar days.

According to the summary, nearly all parts of the world have contributed toward the upward trend in agricultural production; but the greatest advance of all has been made in North America, which now produces 50 percent more than in the prewar years. Latin America is producing 30 percent more. The least progress has probably been made in the Soviet Union and Eastern Europe; in the latter, production is still below the prewar level. Western Europe has made substantial increases and is now well above its prewar production. The Middle East is producing substantially more than it did before the war and has a good supply of grain for feed, food, and forage.

World economic conditions are the key to distribution of agricultural supplies, the summary points out. A healthy economic activity should continue throughout the world to provide the purchasing power needed for moving agricultural products from surplus to deficit areas, and to encourage agricultural producers to maintain high levels of production.

Well-sustained demand is indicated for 1954, the summary states, but not at levels that would match existing supplies. Recent actions by governments in many parts of the world reveal a groundswell of policies designed to improve the lot of farmers and consumers alike. The return to trade to private channels, increased use of incentives to production, measures to increase the producer's share in the products of the soil, the apparently more favorable attitude of Iron Curtain countries toward consumption at the expense of investment, and the keen worldwide interest in better farming practices —each of these, says the summary, should be a factor not only in increasing supplies of food and fibers but also in moving them toward consumption.

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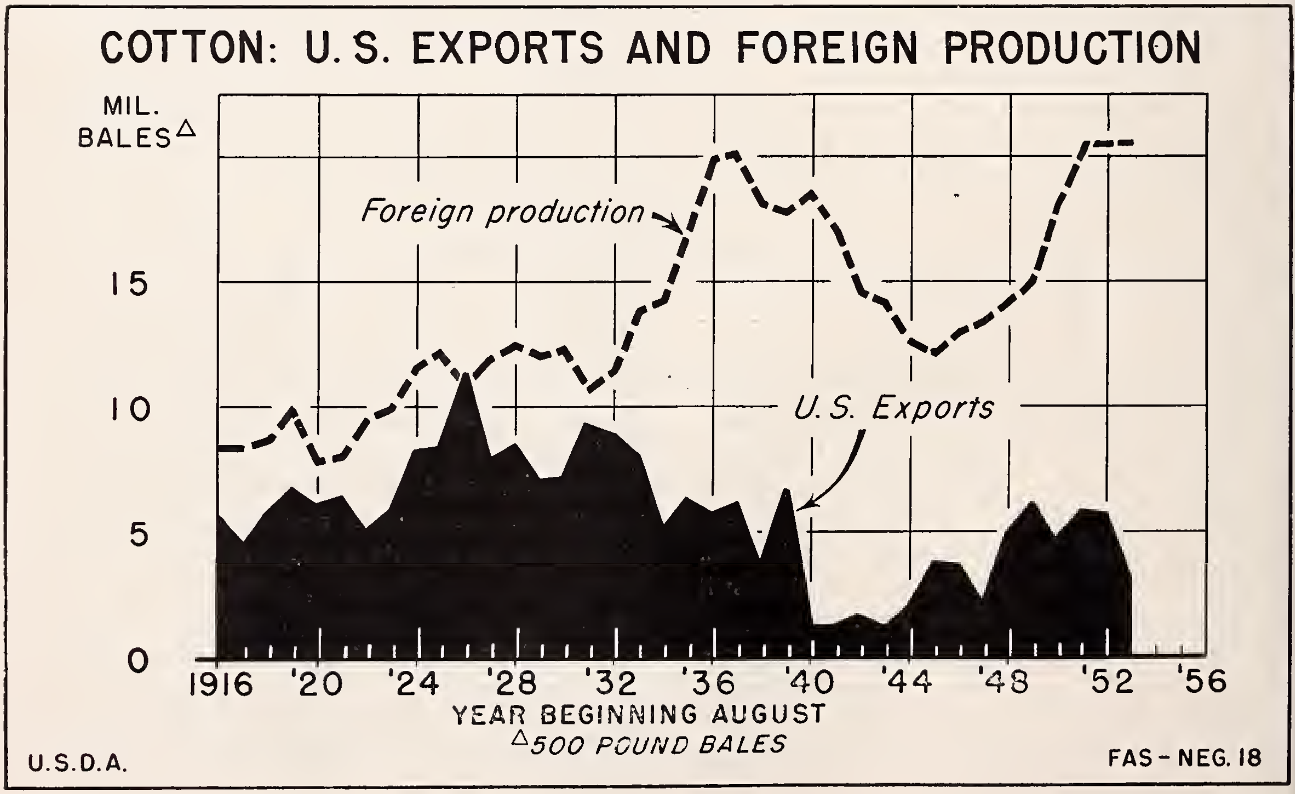

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